



**CONESTOGA-ROVERS**  
& ASSOCIATES

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June 23, 2000

Reference No. 15670

Mr. Kevin Adler  
United States Environmental Protection Agency  
Region V  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

Dear Mr. Adler:

Re: Waukegan Manufactured Gas and Coke Plant Site

On behalf of the Waukegan Manufactured Gas and Coke Plant (WCP) Site Group we are writing to advise you of the anticipated schedule to complete the Pilot Study and to identify some relatively minor changes to and potential issues with the Work Plan.

#### Schedule

An implementation schedule is presented in attachment A. We have added an optional pump test under Unit Operations. This task is under consideration as a result of preliminary evaluation of the Tracer Study as described under separate heading below. We are trying to achieve a July 17, 2000 field start to ensure completion before winter weather conditions set in. This schedule results in a short review time for USEPA.

#### Work Plan

##### CPT/GC

A fully functioning cone penetrometer with attached gas chromatograph has not been located. This combination of technologies is not routinely available. Some vendors have offered to jury rig a CPT/GC but as this would involve an expensive mobilization and method development with uncertain outcome CRA has elected to proceed with cone penetrometry and continuous monitoring of UV fluorescence and conductivity. ✓

#### TREATABILITY STUDY

ANDCO is unable to provide an electro-chemical precipitation unit and therefore CRA will proceed with chemical removal of arsenic as the pretreatment step.

We are also proposing that the *two stage biological test be dropped in favour of testing with a single biological reactor applied to both pretreated (arsenic removal) and raw groundwater.* ✓

US EPA RECORDS CENTER REGION 5



399196

REGISTERED COMPANY  
**ISO 9001**  
ENGINEERING DESIGN



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### Monitoring Wells

CRA is proposing to use 0.5 inch PVC piezometers bundled and installed in a single hollow stem auger borehole instead of the direct push monitoring wells identified in the Final Work Plan. A pre-assembled cluster of five piezometers set at the correct depth will be installed in a hollow stem auger boring drilled with a knock out cap in the lead auger. The bottom one-foot of each piezometer will be perforated and wrapped with geotextile fabric. Each piezometer will be capped and labeled above the ground surface. It is expected that the annular space will fill naturally as the augers are withdrawn. Any annular space that remains after the augers are withdrawn will be filled with bentonite. ✓

### TRACER STUDY

Preliminary evaluation of the Tracer Study using particle tracking modeling indicates that there may not be sufficient capture during the E/R test for the Tracer Study to produce useful results. Further investigation reveals inconsistency in the hydraulic conductivity data. Hydraulic conductivity calculated from the incomplete pumping test is 47 ft/day while the geometric mean of the slug test data is 4.7 ft/day, an order of magnitude difference. A further concern is that the pumping test result is higher than the slug test result, typically the slug test provides higher estimates of hydraulic conductivity. The order of magnitude difference could mean the difference between success and failure of the Tracer Study and therefore more confidence in the hydraulic conductivity is required. We are continuing to evaluate this issue but it is probable that a modification to the Tracer Study will be required.

not at  
Enclosure

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Alan W. Van Norman, P.Eng.

AVN/pw/2

Encl.

c.c.: Jim Campbell  
Roger Crawford  
Mike Rehor  
Steve Matuszak  
Chris Szela  
Jerry Wilman  
Phil Smith  
Steve Wanner

